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ABSTRACT

A study at the University of Missouri-Columbia investigated the stress factors and coping mechanisms among 196 faculty members in 16 departments. The study was undertaken during a period of low faculty salaries in comparison with similar institutions, characterized as moderate to severe financial decline. During the middle of the fall semester of 1991, participants completed an Occupational Stress Inventory (OSI) and general affect rating sheet. It was found that individual faculty feelings about life in general (general affect) strongly affected perceptions of occupational stress, and all coping mechanisms were enhanced strongly by increased general affect. Results indicated the faculty differed by discipline type (hard vs. soft, pure vs. applied, life vs. non-life) on half of the 14 OSI subscales. Faculty age and tenure status predicted three related subscales, and gender predicted only one subscale. General affect predicted 11 subscales. Faculty moderated occupational stress differently, by discipline type, using a variety of coping resources. (MSE)

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STRESS, STRAIN, AND COPING RESOURCES AMONG FACULTY AT A RESEARCH UNIVERSITY DURING FINANCIAL DECLINE

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This paper was presented at the Thirty-Sixth Annual Forum of the Association for Institutional Research held in Albuquerque, New Mexico, May 5-8, 1996. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Editor
AIR Forum Publications

ABSTRACT

Interaction between faculty stress, strain, and coping resources was investigated at a Midwestern Research I university during fiscal stress. Faculty in 16 departments at the University of Missouri-Columbia (MU) were categorized by the Biglan model, then completed the Occupational Stress Inventory (OSI) and General Affect rating sheet. MU faculty differ by Biglan dimensions on half of the fourteen OSI subscales. Faculty age and tenure status predict three related OSI subscales. Gender predicts only one OSI subscale. General Affect predicts eleven OSI subscales. Faculty differentially moderate, by Biglan dimension, their occupational stress by use of a variety of coping resources.

The past fifteen years has shown a new interest in occupational stress by academics (Ivancevich & Matteson, 1980; Cooper & Payne, 1980; Peters & Mayfield, 1982; Gmelch, Lovrich, & Wilke, 1983, 1984). Stress within the academic environment has been more recently studied, specifically the stress that professors undergo in their work (Gmelch, Wilke, & Lovrich, 1986). Many factors (declining enrollments, decreased opportunities for faculty mobility and funding sources) have recently threatened academic workplaces. Faced with serious financial recession, the level of both public and private financial support to American colleges and universities has declined. This study questions whether all University of Missouri-Columbia (MU) faculty, as representative of faculty in Research I institutions during financial decline, have the same reaction to the same stressful situations, using an interactional perspective to investigate the relationship of stress, strain, and coping resources to situational and personal variables. No studies have been found which investigate this relationship during a period of fiscal decline at a major research university. Nor have any studies been found that explore the relationship between quality of faculty life and interactional measures of stress with faculty members in a higher education setting as subjects. Institutional researchers and university administrators may benefit from an interactional perspective to help reduce stress on their campuses, to aid in the "management of decline," and to provide preventive or remedial programs for faculty and staff.

LITERATURE REVIEW

Several measures have been used to determine decline in organizational resources. Cameron, Whetton, Kim, and Chaffee (1987) note that perceptual measures, enrollment

patterns, and revenue trends are three usual methods to assess organizational decline in colleges and universities. Smart (1989) acknowledges the legitimacy of these measures of organizational decline. Cameron and associates (Cameron, 1983; Cameron, Whetton, & Kim, 1987) propose that a 5% decline in institutional funding is used for determination of stable versus declining revenue patterns.

Several studies propose that faculty stress comes from a variety of sources: heavy teaching loads, expectations for doing research, insufficient time to spend with one's family, routine duties, long hours, poor facilities, friction among faculty members, administrative red tape, high self-expectations, insufficient time for keeping up with professional developments, difficulties in obtaining research funds, low salaries, and preparation of manuscripts for publication (Eckert & Williams, 1972; Koester & Clark, 1980; Peters & Mayfield, 1982; Keinan & Perlberg, 1987). From all reported sources of faculty stress, some common patterns have emerged: high self-expectations and self-doubt, time constraints, and insufficient resources and salaries (Gmelch et al., 1986).

Work stress and the resulting strain are perhaps due to the interaction of the individual and environment. Osipow and Spokane (1983, 1984) proposed a model, based on French's (1976) views, of a closed system in which occupational stress, personal strain, and coping resources interact. Accordingly, work stress occurs as result of the person fitting poorly into the environment, causing strain; use of coping resources intermediates between stress and strain. The distinction between <u>perceived stress</u> and <u>experienced strain</u> is critical to the model. High occupational stress does not necessarily predict high strain; only by including the degree to which coping resources exist is an adequate

prediction of strain possible (Osipow & Davis, 1988). The individual's perceptual filter operates to determine to what extent an experience is considered stressful.

Using this model, the Occupational Stress Inventory (OSI) provides subjective measures to indicate the relationship between occupational stress, coping resources, and resulting strain (Psychological Assessment Resources, Inc., 1987). Each of the fourteen OSI subscales has meaning as a separate theoretical construct, yet they fit together into three domains. The occupational stress domain includes Role Overload (RO), Role Insufficiency (RI), Role Ambiguity (RA), Role Boundary (RB), Responsibility (R), and Physical Environment (PE). The personal strain domain includes Vocational Strain (VS), Psychological Strain (PSY), Interpersonal Strain (IS), and Physical Strain (PHS). The coping resources domain includes Recreation (RE), Self-care (SC), Social Supports (SS), and Rational/Cognitive Coping (RC). The model includes the qualitative types of social role stress, and their quantitative aspects of frequency, intensity, and duration. The OSI scales measure occupational stress, strain, and coping in a generic fashion rather than in an occupationally-specific fashion. Correlations between occupational stress and strain generally are positive, while correlations between occupational strain and coping resources are generally negative (Osipow & Spokane, 1983). Given equal amounts of stress, strain varies as a function of coping resources (Osipow, Doty, & Spokane, 1985).

Different stress levels are reported by faculty with different productivity levels (Wilke, Gmelch, & Lovrich, 1984) and from different disciplines (Gmelch et al., 1984, Brown et al., 1986). Biglan (1973a) categorized academic areas based on faculty

members' perceptions of the relative similarities and differences between those areas (social supports, collaboration, research paradigm, etc.). Then Biglan (1973b) used multidimensional scaling procedures to yield a three-dimensional schema, into which each department best fits. The three dimensions were: (a) concern for Paradigm (Hard vs. Soft), (b) concern for Application (Pure vs. Applied), and (c) concern for Life Systems (Nonlife vs. Life). Abbreviations for Biglan categories are those used by Biglan (1973a, 1973b): HPNL, HPL, SPNL, SPL, HANL, HAL, SANL, and SAL. Several studies have validated the Biglan model (Smart & Elton, 1975, 1976, 1982; Smart & McLaughlin, 1978; Creswell et al., 1979; Creswell & Bean, 1981). Creswell and Bean (1981) suggest the generalizability of the Biglan categories to all Research I and II and Doctoral Granting I and II institutions.

Other institutional factors (e.g., tenure status) and personal factors (age, gender, quality of life) are likely to affect levels of faculty stress. New faculty are usually expected to devote considerable time and effort to their careers; additional stress may be experienced by junior faculty, due to career uncertainty (non-tenure). Older faculty are likely to report different work environments than younger faculty, but it also seems likely that older and younger workers react differently to their work environments (Osipow, 1987). Female faculty report more stress, less satisfaction, lower self-efficiency as researchers, less likelihood of promotion, salary disadvantage, and a higher dropout rate from academic life (Locke, Fitzpatrick, & White, 1983).

Subjective reporting of an individual faculty member's "happiness," the quality of life experience, may provide insight into a personal factor which may affect faculty stress.

Campbell, Converse, & Rodgers (1976) developed a measure to indicate the affective quality of one's life (pleasantness-unpleasantness) through the respondent's reaction to a series of paired adjectives, describing their lives in positive or negative terms, presented in a semantic differential format. Of these pairs, eight carried substantial loading on the quality of life experience and were called the Index of General Affect, which is calculated by simply taking the mean of each individual's scores on the eight semantic differential items. Findings by Campbell et al. (1976) indicated high intercorrelations among the eight items, and a high correlation between the Index of General Affect and other measures of satisfaction with the domains of life.

METHODS

During the time of this study, salaries of MU faculty lagged up to 25% behind those of faculty from similar institutions (Brubaker, 1992; Staff, 1992). Using figures available for the 1990-1991 and 1991-1992 fiscal years (University of Missouri, 1991, 1992), the MU budget for faculty compensation dropped 2.2% during that time. MU faculty salaries were adjusted for inflation and cost of living using the consumer price index (U.S. Dept. Of Labor, 1992). Accordingly, MU was considered as being in moderate to severe decline at the time of this study.

To differentiate between faculty from the variety of disciplines existing on campus, Biglan's behavioral model was used to categorize departments by a three-dimensional schema. Only departments with at least ten full-time, regular faculty were included in a stratified random sampling. Two departments in each Biglan category were selected accordingly (see Table 1). Subjects were drawn from MU departments within the

Table 1

Stratified Random Sampling of MU Academic Task Areas in Three Dimensions[a]

	Paradigm			
	Hard		Soft	
Application	Nonlife	Life	Nonlife	Life
Pure	**HPNL**	**HPL**	**SPNL**	**SPL**
	Chemistry (12)	Biological Sciences (11)	English (11)	Psychology (14)
	Statistics (7)	Biochemistry (10)	Music (20)	Political Science (6)
Applied	**HANL**	**HAL**	**SANL**	**SAL**
	Civil Engineering (9)	Animal Sciences (21)	Accountancy (4)	Curriculum & Instruction (11)
	Electrical Natural & Computing Engineering (14)	Management Resources (24)	Health & (10)	Physical Education (12)

Note. [a]Abbreviations shown in **bold** are Biglan (1973a, 1973b) categories. Numbers in parentheses indicate number of returns for each department.

Colleges of Agriculture, Arts and Sciences, Business and Public Administration, Education, Engineering, Home Economics, and Human Environmental Science; and from the Schools of Accountancy and Natural Resources. As proposed by Wilke et al. (1984), no departments were sampled in settings which are clinical (Schools of Medicine, Nursing, or Veterinary Medicine); legal (School of Law); or journalistic (School of Journalism), since the job descriptions of these faculty differ from those of typical liberal arts faculty. Within MU structure, "divisions" or "schools" were treated as academic departments, consistent with Biglan's original intent.

To measure "general affect," the researcher prepared a General Affect Rating Sheet, as adapted from Campbell et al., (1976). During the middle eight weeks of the Fall Semester, 1991, the OSI instrument and rating sheet and the General Affect Rating Sheet were mailed to each full-time, regular faculty member in the departments selected (with a cover letter describing the purposes of the study and directions for completing the forms), along with a stamped, self-addressed envelope. Since use of the OSI involves perhaps sensitive addressing of personal issues, faculty were asked not to identify themselves by name or job title, but just to write the age, sex, and date on the OSI rating sheet. To identify tenure status, a check box was provided on the General Affect Rating Sheet. A check box was also provided to request further information about the scores.

Each instrument was identified with a random number, used only to determine which faculty (from which department) returned the instruments and which faculty requested further information. A follow-up telephone call was made to those faculty who did not respond within a reasonable period of time. From 350 MU faculty selected

for the study, 196 completed and returned the instruments (return rate = 56.0%); of these faculty, 166 were male and 30 were female. The frequency distribution by department is also shown in Table 1.

For OSI items not marked, a score was assigned by using the average of the scores for the rest of the items in the subscale involved. Less than five subjects did not respond to one or more items of the OSI. These instances mostly related to two items referring to the subject's spouse, since those subjects were not married at the time of the survey.

For all MU faculty, the mean of the Index of General Affect was +1.7 with a standard deviation of 0.905, which is similar to the mean (+1.7) and standard deviation (1.1) in the original study by Campbell et al. (1976).

Due to the unbalanced design of the study, preliminary analysis employed the general linear model (GLM) (Littell, Freund, & Spector, 1991) to evaluate the differences between Biglan categories for the OSI subscales, followed by Fisher's (1949) least significant differences (LSD) test. (The least squares means [LSMs] and Standard Errors [SEs] produced from GLM analyses were used for comparison of OSI scores.) Preliminary determination of differences by Biglan's dimensions also included three-factor GLM analyses. A small significance level ($p < .05$) was used. Three OSI subscales differed significantly by Biglan category (RA, R, and PE), all in the occupational stress domain of the OSI. Also, seven OSI subscales differed significantly by Biglan dimension (RO, RA, R, PE, VS, PSY, RE). There were differences in one personal strain subscale (VS), and in one coping resources subscale (RE), between Pure

and Applied departments. Also, an interaction existed between the Paradigm and Application dimensions for a personal strain subscale (PSY).

The maximum R^2 improvement technique (MAXR) was used to determine the best model to predict each OSI subscale, with Index of General Affect, tenure status, gender, age, and the three Biglan dimensions as independent variables. To insure that the models produced by MAXR analyses include independent variables which clearly contributed to the predictive power of the models, a small significance level ($p < .05$) was used. To indicate the strength of the effect size, the MAXR results were evaluated against Cohen's (1977) R^2 values for small (.02), medium (.13), and large (.26) effect size. The effect size for most of the models for the OSI subscales were small or medium, with only the model for the PSY subscale having a large effect size. Table 2 summarizes the results of the stepwise regressions.

The Index of General Affect (AFF) contributed strongly to the predictive power of the models for eleven OSI subscales. Three occupational stress domain scores (RI, RA, RB), and all four personal strain domain scores (VS, PSY, IS, PSY), decreased with increased AFF scores. All four coping resources domain scores (RE, SC, SS, RC) increased with increased general affect (AFF) scores.

Role insufficiency stress and recreation coping scores were greater for tenured faculty; physical environment stress and physical strain scores were greater for untenured faculty. Role overload stress scores decreased with faculty age while self-care coping scores increased with faculty age.

Role ambiguity stress scores were greater for male faculty.

Table 2

Summary of Stepwise (MAXR) Improvement Technique on the OSI Subscales with PD, AP, LIF, AFF, AGE, TEN, and GEN as Independent Variables[a]

OSI Scales[b]													
RO	RI	RA	RB	R	PE	VS	PSY	IS	PHS	RE	SC	SS	RC
LIF AGE	AFF TEN	AP AFF GEN	AFF	PD AP LIF	LIF TEN	AFF	AFF	AFF	AFF TEN	AP AFF TEN	AFF AGE	AFF	AFF

Personal Strain Scales[c]			
VS	PSY	IS	PHS
RI (+0.17)	RO (+0.21)	R (+0.14)	RO (+0.17)
RB (+0.12)	RB (+0.24)	PE (+0.16)	PE (+0.26)
R (+0.08)	RE (-0.23)	RE (-0.14)	RE (-0.15)
PE (+0.15)	SS (-0.12)	SS (-0.28)	SC (-0.22)
RC (-0.22)	AFF(-2.01)	AFF(-1.31)	SS (-0.12)
AP (+1.31)			AFF(-0.96)
AFF(-0.88)			

Note. [a]Only values when $p < .05$ are shown.
[b]Abbreviations for OSI subscales are as in the text; PD=Paradigm; AP=Application; LIF=Life System; AFF=Index of General Affect; AGE=Age; TEN=Tenure Status; GEN=Gender.
[c]Direction and magnitude of *b* values are in parentheses.

Role overload stress scores of Life departments were greater than those for Nonlife departments. Role ambiguity stress scores of Applied departments were greater than those of Pure departments. Responsibility stress scores of Hard, Pure, and Life departments were greater than those of Soft, Applied, and Nonlife departments. Physical environment stress scores of Life departments were greater than those of Nonlife departments. Recreation coping scores of Applied departments were greater than those of Pure departments.

The next question was whether or not faculty differ by Biglan's dimensions in use of coping resources to moderate the stress in their environment. The MAXR improvement technique determined predictive models for each subscale of the personal strain domain, using the subscales of the occupational stress and coping resources domains, Biglan dimension, Index of General Affect, age, tenure status, and gender as independent variables. There was a large effect size for all these models of personal strain. The results are also summarized in Table 2. Note that the Index of General Affect was a major predictor variable for the models of all four personal strain subscales, with increased "general affect" predicting decreased strain. Notably, only one Biglan dimension (AP) moderated only one personal strain scale (VS), which indicated that further stepwise regressions were required by Biglan dimension to localize by faculty areas the predictor variables for personal strain. Again, the effect size of all personal strain models was large. Table 3 summarizes the results of these analyses. Note that general affect (AFF) contributed strongly to the predictive power of the model of almost all psychological strain subscales. Gender (GEN) contributed strongly to the physical

Table 3

Summary of Stepwise (MAXR) Improvement Technique on Personal Strain Scales by Biglan Dimension with Occupational Stress Scales, Coping Resources Scales, AFF, AGE, TEN and GEN as Independent Variables[a]

Biglan Dimension	Personal Strain Scales[b]			
	VS	PSY	IS	PHS
Hard	RI (+0.25)	RB (+0.26)	RI (+0.20)	RI (+0.25)
	R (+0.13)	R (+0.21)	R (+0.25)	R (+0.18)
	RC (-0.26)	RE (-0.38)	RE (-0.37)	PE (+0.29)
	AFF(-0.98)	AFF(-2.47)	SS (-0.21)	RE (-0.31)
				SC (-0.23)
Soft	RB (+0.25)	RO (+0.32)	RO (+0.24)	RO (+0.34)
	PE (+0.25)	RB (+0.21)	SS (-0.39)	SC (-0.32)
	RC (-0.19)	SS (-0.16)		SS (-0.21)
	AFF(-0.97)	AFF(-2.16)		
Pure	RB (+0.18)	RO (+0.28)	PE (+0.40)	PE (+0.40)
	RC (-0.16)	PE (+0.30)	SS (-0.23)	SC (-0.39)
	AFF(-1.68)	AFF(-2.90)	AFF(-1.61)	SS (-0.19)
				GEN(3.38)
Applied	RI (+0.17)	RB (+0.34)	RB (+0.18)	RB (+0.25)
	RB (+0.20)	R (+0.17)	RE (-0.20)	RE (-0.40)
	PE (+0.20)	RE (-0.24)	SS (-0.29)	
	RC (-0.27)	SS (-0.18)		
		AFF(-2.11)		
Nonlife	RB (+0.16)	RO (+0.21)	RB (+0.20)	RB (+0.22)
	RC (-0.27)	RB (+0.23)	PE (+0.42)	PE (+0.39)
	AFF(-1.11)	AFF(-3.52)	SS (-0.33)	SC (-0.49)
Life	RO (+0.18)	RB (+0.21)	RO (+0.23)	RO (+0.23)
	RI (+0.35)	R (+0.23)	RE (-0.18)	RE (-0.30)
	PE (+0.24)	RE (-0.29)	SS (-0.23)	SS (-0.18)
	RC (-0.12)	SS (-0.24)	AFF(-1.53)	
		AFF(-1.62)		

Note. [a]Only values when $p < .05$ are shown.
AFF=Index of General Affect; AGE=Age; TEN=Tenure Status; GEN=Gender.
[b]Abbreviations for OSI subscales are as in the text. Direction and magnitude of *b* values are in parentheses.

strain model, with female Pure area faculty reporting higher physical strain. However, age and tenure status did not contribute to the predictive power of any personal strain model when analyzed by Biglan dimension.

For MU faculty during this study, there were important intervening factors, other than coping resources, to predict personal strain. There also appeared to be differences by Biglan dimension in the predictor variables for personal strain.

DISCUSSION AND CONCLUSIONS

Preliminary analysis did not support the model inherent in the OSI. Though recreation coping differed by Biglan dimension, this could not explain differences in faculty stress as indicated by Biglan category. Multivariate analyses provided more distinctions among MU faculty by Biglan dimension. There were factors which worked for MU faculty in general ways to moderate how MU faculty perceived and dealt with stress.

Individual MU faculty feelings about life in general ("general affect") seemed to strongly affect how occupational stress was perceived; resulting strain was decreased by increased "happiness," regardless of MU department. All mechanisms of coping were strongly enhanced by increased general affect. The apparent power of general affect to predict personal strain was consistent with previous research (Near, Rice, & Hunt, 1987).

Tenure and age seemed to be related factors for MU faculty stress, since tenure tends to come with age. Untenured, younger faculty perceived more stress from the physical environment (extreme environmental conditions) and role overload (job demands exceeding resources), and experienced more physical strain (health problems),

as compared to tenured faculty. Younger, untenured faculty, likely having greater teaching loads and spending more hours doing research, often had their health and self-care negatively affected, which is consistent with findings by Gmelch et al. (1986). Tenured, more mature faculty perceived greater role insufficiency stress (under-utilization), and used recreational and self-care coping resources to moderate stress, as compared to untenured faculty.

Role ambiguity (unclear expectations) was predicted to be greater for MU male faculty, though preliminary analysis revealed this was confounded with general affect scores (females having greater general affect), and the Application dimension (Applied departments having higher role ambiguity than Pure departments).

There was a general response by MU faculty to decrease vocational strain (work quality or output problems) through rational/cognitive coping mechanisms (time management, problem solving), which makes intuitive sense. For most MU faculty, role boundary stress (conflicting role demands) was the strongest predictor of vocational strain; however responsibility stress (welfare of subordinates) predicted vocational strain of Hard departments, and role overload stress predicted vocational strain of Life departments. Finally, most faculty reported that self-care and recreation was used to decrease physical strain; however, for faculty in Hard, Pure, and Nonlife departments, physical strain was predicted by physical environment stress, such as one would find in laboratory settings.

There appeared to be broader differences in the kind of stress experienced and the kind of personal coping used by Biglan dimension at MU. For faculty in Hard

departments, responsibility stress and role insufficiency stress predicted all personal strain models. It appeared that, during fiscal decline, since faculty in Hard departments are heavily involved in laboratory settings, and employ graduate students and others as assistants, the responsibility for these people, and feelings of under-utilization, seemed to be causing diverse personal strain. Faculty in Hard departments tended to use recreation as their main coping mechanism, though social supports were used to decrease interpersonal strain.

For faculty in Soft departments, role overload stress predicted most personal strain models, and these faculty tended to use social supports to cope.

For faculty in Pure departments, physical environment stress predicted most personal strain models, and these faculty tended to use social supports to cope with interpersonal strain and physical strain. It is notable that female Pure area faculty reported higher physical strain than male faculty, perhaps due to low self-care coping and perceived stress of laboratory settings.

For faculty in Applied and Nonlife departments, role boundary stress predicted all personal strain models. These faculty were often linked to laboratory settings, and likely experienced conflicting demands regarding those facilities. However, Applied area faculty tended to use recreation to cope, while Nonlife area faculty generally used social supports to decrease interpersonal strain and used self-care to decrease physical strain.

For Life faculty, role overload stress predicted almost all personal strain models; role boundary and responsibility stress predicted their psychological strain model, while role insufficiency also predicted their vocational strain. These faculty seemed to have

more complex stress influencing their strain, but generally perceived high role overload. It is also notable that these faculty, like the Soft area faculty, used social supports to cope with their stress.

Recommendations

During fiscal decline, institutional researchers and university administrators may benefit from investigations of faculty stress in various academic areas, the kinds of occupational stress perceived, the kinds of personal coping used to alleviate personal strain. Faculty support programs, such as time management seminars, health-related education, recreation, or personal awareness activities aimed at building social supports, would aid faculty in dealing with stress. These could be incorporated into present faculty development programs, as appropriate to the academic area, rather than recommending overall "stress management" programs to faculty. Recreation facilities and programs, applicable to academic areas which use recreational coping, should be available without additional costs to those faculty. Supportive department chairs may promote social supports among colleagues, paying special attention to recent entrants into the academic profession. Finally, faculty who are provided with services involving educative, self-directed development components (such as marital enrichment, financial planning, and stress reduction programs) will be aided in finding personal coping mechanisms.

It is recommended that further investigations of "general affect" include a more comprehensive instrument than the Index of General Affect. Perhaps the index of nonwork satisfaction (Near, Smith, Rice, & Hunt, 1983) or the Affectometer (Kammann & Flett, 1983) will provide better differentiation of faculty life satisfaction. Lastly,

quantitative determination of teaching, research, and service components of faculty is required to distinguish among sources of role ambiguity of this population.

REFERENCES

Biglan, A. (1973a). The characteristics of subject matter in different academic areas. Journal of Applied Psychology, 57(3), 195-203.

Biglan, A. (1973b). Relationships between subject matter characteristics and the structure and output of university departments. Journal of Applied Psychology, 57(3), 204-213.

Brown, R. D., Bond, S., Gerndt, J., Krager, L., Krantz, B., Lukin, M., & Prentice, D. (1986). Stress on campus: An interactional perspective. Research in Higher Education, 24(1), 97-112.

Brubaker, M. (1992, November 3). Kiesler sets goals for MU campus. Columbia Tribune, p. 1. Columbia, MO.

Cameron, K. S. (1983). Strategic responses to conditions of decline: Higher education and the private sector. Journal of Higher Education, 54(4), 359-380.

Cameron, K. S., Whetton, D. A., & Kim, M. U. (1987). Organizational dysfunctions of decline. Academy of Management Journal, 30(1), 126-138.

Cameron, K. S., Whetton, D. A., Kim, M. U., & Chaffee, E. E. (1987). The aftermath of decline. Review of Higher Education, 10(3), 215-234.

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). The quality of American life: Perceptions, evaluations, and satisfaction. New York: Sage Foundation.

Cohen, J. (1977). Statistical power analysis for the behavioral sciences. New York: Academic Press.

Cooper, C. L., & Payne, R. (1980). Current concerns in occupational stress. New York: John Wiley & Sons.

Creswell, J. W., & Bean, J. P. (1981). Research output, socialization, and the Biglan model. Research in Higher Education, 15(1), 69-91.

Creswell, J. W., Seagren, A. T., & Henry, T. C. (1979). Professional training needs of department chairpersons: A test of the Biglan model. Planning and Changing, 10, 224-237.

Eckert, R. S., & Williams, H. Y. (1972). College faculty view themselves and their jobs. Minneapolis: University of Minnesota.

Fisher, R. A. (1949). Design of Experiments (5th ed.). Edinburgh: Oliver & Boyd Ltd.

French, J. R. P. (1976, September). Job demands and worker health. Paper presented at the American Psychological Association Symposium, Washington, D. C.

Gmelch, W. H., Lovrich, N. P., & Wilke, P. K. (1983). A national study of stress among university faculty members. Phi Delta Kappa, 65, 367.

Gmelch, W. H., Lovrich, N. P., & Wilke, P. K. (1984). Sources of stress in academe: A national perspective. Research in Higher Education, 20(4), 477-490.

Gmelch, W. H., Wilke, P. K., & Lovrich, N. P. (1986). Dimensions of stress among university faculty: Factor-analytic results from a national study. Research in Higher Education, 24(3), 266-286.

Ivancevich, J. M., & Matteson, M. T. (1980). Stress and work: A managerial perspective. Glenview, IL: Scott, Foresman & Company.

Kamann, R., & Flett, R. (1983). Affectometer 2: A scale to measure current level of happiness. Australian Journal of Psychology, 35, 259-265.

Keinan, G., & Perlberg, A. (1987). Stress in academe: A cross-cultural comparison between Israeli and American academicians. Journal of Cross-Cultural Psychology, 18(2), 193-207.

Koester, L. S., & Clark, C. H. (1980, September). Academic job satisfaction: Differences related to sex and marital status. Paper presented at the meeting of the American Psychological Association, Montreal, Canada.

Littell, R. C., Freund, R. S., & Spector, P. C. (1991). SAS System for Linear Models. Cary, NC: SAS Institute, Inc.

Locke, E. A., Fitzpatrick, W., & White, F. M. (1983). Job satisfaction and role clarity among university and college faculty. The Review of Higher Education, 6, 343-365.

Near, J. P., Smith, C. A., Rice, R. W., & Hunt, R. G. (1983). Job satisfaction and nonwork satisfaction as components of life satisfaction. Journal of Applied Social Psychology, 13(2), 126-144.

Near, J. P., Rice, R. W., & Hunt, R. G. (1987). Job satisfaction and life satisfaction: A profile analysis. Social Indicators Research, 19(4), 383-401.

Osipow, S. H. (1987). Applying person-environment theory to vocational behavior. Journal of Vocational Behavior, 31, 333-336.

Osipow, S. H., & Davis, A. S. (1988). The relationship of coping resources to occupational stress and strain. Journal of Vocational Behavior, 32, 1-15.

Osipow, S. H., Doty, R. E., & Spokane, A. R. (1985). Occupational stress, strain, and coping across the life span. Journal of Vocational Behavior, 27, 98-108.

Osipow, S. H., & Spokane, A. R. (1983). A manual for measures of occupational stress, strain, and coping. Columbus, OH: Marathon Consulting and Press.

Osipow, S. H., & Spokane, A. R. (1984). Measuring occupational stress, strain, and coping. In S. Oskamp, Applied social psychology annual Vol. 5: Applications in organizational settings (pp. 67-86). Beverly Hills: Sage Publications.

Peters, D. S., & Mayfield, J. R. (1982). Are there any rewards for teaching? Improving College and University Teaching, 30, 105-110.

Psychological Assessment Resources. (1987). OSI Profile Form. Odessa, FL: Author.

Smart, J. C. (1989). Organizational decline and effectiveness in private higher education. Research in Higher Education, 30(4), 387-401.

Smart, J. C., & Elton, C. F. (1975). Goal orientations of academic departments: A test of Biglan's model. Journal of Applied Psychology, 60(5), 580-588.

Smart, J. C., & Elton, C. F. (1976). Administrative roles of department chairmen. In J. C. Smart & J. R. Montgomery (Eds.), Examining departmental management: New Directions for Institutional Research (pp.39-60). San Francisco: Jossey-Bass.

Smart, J. C., & Elton, C. F. (1982). Validation of the Biglan model. Research in Higher Education, 17(3), 213-229.

Smart, J. C., & McLaughlin, G. W. (1978). Reward structures of academic disciplines. Research in Higher Education, 8, 39-55.

Staff. (1992, August 26). The states. The Chronicle of Higher Education, pp. 76-77.

University of Missouri. (1991). Operating budget. Columbia: Budget and Analytical Services.

University of Missouri. (1992). Operating budget. Columbia: Budget and Analytical Services.

U. S. Dept. of Labor. (1992). Consumer price index. Washington, DC: Bureau of Labor Statistics.

Wilke, P. K., Gmelch, W. H., & Lovrich, N. P. (1984). Stress and productivity: Evidence of the inverted U function in a national study of university faculty. San Francisco: American Association for the Study of Higher Education.